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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HUILONG ZHU, PHILIP J. OLDIGES, BRUCE B. DORIS, XINLIN WANG, OLEG GLUSCHENKOV, HUAJIE CHEN, and YING ZHANG

Appeal 2009-008805
Application 10/708,378
Technology Center 2800

Before ALLEN R. MACDONALD, CARL W. WHITEHEAD, JR., and BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. §§ 6(b) and 134(a) from the Examiner's rejection of claims 1-5, 10, 11, 15, and 21-25 (*see* App. Br. 5).

We affirm-in-part.

Appellants' invention relates to hybrid silicon-on-insulator (SOI)/bulk semiconductor transistors (Title).

Claims 1-5, 11, and 21-25 stand rejected under 35 U.S.C. § 102(b) as anticipated by Krivokapic (US 6,091,123; issued July 18, 2000).

Claims 10 and 15 stand rejected under 35 U.S.C. § 103(a) as obvious over Krivokapic in view of Bae (US 6,657,258 B2; issued Dec. 2, 2003).

ANALYSIS

Claims 1, 2, 5 and 11²

We affirm the anticipation rejection of claims 1, 2, 5 and 11 for the reasons set forth in the Examiner's Answer. We add the following comments for completeness.

Appellants argue, *inter alia*, that Krivokapic does not anticipate independent claims 1 and 11 because the prior art does not disclose “a discontinuous film . . . *having a discontinuity aligned to said gate structure*” (claims 1 and 11, emphasis added) (App. Br. 12). That is, Appellants argue that the Examiner has misapplied the product-by-process doctrine because (i) “the Examiner admits that no weight is given to the method of making the

² Appellants argue claims 1, 5 and 11 together as a group. App. Br. 12-14. Appellants nominally argue dependent claim 2 separately from independent claim 1, but the arguments presented for claim 2 are substantially the same as those presented for claim 1. Accordingly, we select independent claim 1 as representative of this claim group. *See* 37 C.F.R. § 41.37(c)(1)(vii).

structure” (Reply Br. 2); and (ii) the claim language structurally distinguishes the present invention over Krivokapic (App. Br. 12-15; Reply Br. 2). These arguments are not persuasive.

We do not agree with Appellants’ contention that the Examiner is giving “no weight” to the method of making the structure (*see* Reply Br. 2). Rather, we understand the Examiner’s position to be that the product-by-process doctrine requires that Appellants’ product claims structurally distinguish Appellants’ invention from the prior art, but that independent claims 1 and 11 do not structurally distinguish Appellants’ invention from Krivokapic (Ans. 3).

In further regard to their second point, Appellants also assert that “correct and accurate alignment of the gate and the discontinuity is [not guaranteed in Krivokapic,] and the alignment is only approximate and provided in an indirect manner which *increases the likelihood of misalignment.*” (App. Br. 14) (emphasis added). We understand this statement to be an admission that, even though Krivokapic’s transistor fabrication method increases the possibility of gate misalignment relative to a self-aligned method, it is still possible to use Krivokapic’s method so as to produce at least some transistors with gates that are aligned to the channel.

Appellants further assert that “the present invention, by providing for alignment of the discontinuity to the gate structure, supports [various additional] meritorious functions” (App. Br. 13-14). However, the alleged meritorious functions (*see* App. Br. 14) are either (i) related to benefits associated with the manufacturing process, or (ii) otherwise not commensurate in scope with the language of independent claims 1 and 11.

We thus sustain the anticipation rejection of claims 1, 2, 5, and 11.

*Claims 21, 22, and 25*³

We affirm the anticipation rejection of claims 21, 22, and 25 for the reasons set forth in the Examiner’s Answer and in the section of the present Decision addressing claims 1, 2, 5, and 11, *supra*. We add the following comments for completeness.

Independent claim 21 is similar in scope to independent claim 1. The primary differences are that claim 21 recites (i) the discontinuity “includes an edge which is located in a position defined by an edge [sic: of] said gate structure” instead of reciting that the discontinuity is “self-aligned” (*cf.* claim 1); and (ii) the discontinuity defines a structure for performing at least one of two specified functions.

The Examiner has set forth a basis for how he is interpreting the claim language “an edge which is located in a position defined by an edge” (Ans. 5), and Appellants have not rebutted the *prima facie* case of anticipation by showing why the Examiner’s interpretation is unreasonably broad (*see* App. Br. 12-14; Reply Br. 3). It is the Appellants’ burden to precisely define the invention, not the USPTO’s. *In re Morris*, 127 F.3d 1048, 1056 (Fed. Cir. 1997). Appellants always have the opportunity to amend the claims during prosecution, and broad interpretation by the Examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05 (CCPA 1969).

Regarding the second difference noted above, the Examiner has found that the discontinuity defines a structure that at least performs the first of two

³ Appellants argue claims 21 and 25 together as a group. *See* App. Br. 12-14. Accordingly, we select independent claim 21 as representative of this claim group. *See* 37 C.F.R. § 41.37(c)(1)(vii).

specified functions: “[t]he discontinuous film 30 in Krivokapic clearly define[s] a depth of a conduction channel of the field effect transistor with the layer 32 of the semiconductor material to less than [said] predetermined distance from the surface of the semiconductor material” (Ans. 5).

Appellants have not provided any rationale for why the Examiner’s finding was in error (*see* App. Br. 12-14; Reply Br. 2-4). Furthermore, Figure 6 of Krivokapic, for example, supports the Examiner’s finding.

Accordingly, we will sustain the anticipation rejection of claims 21 and 25. We also sustain the rejection of dependent claim 22 for the same reasons as set forth in relation to claims 1, 2, and 21.

Claims 3, 4, 23, and 24

Claims 3 and 23 respectively depend from claims 1 and 21, both further reciting, “wherein said discontinuous film is a stressed film.” The Examiner states in the final rejection that “the insulator film (30) in Krivokapic can inherently be a stressed film” (Ans. 3). In response to Appellants’ challenge to the Examiner’s basis for concluding that the film is inherently stressed (App. Br. 15), the Examiner merely reiterates that “discontinuous film 30 inherently provides stress to the conduction channel of the field effect transistor. Appellants failed to prove otherwise” (Ans. 5).

The initial burden, though, is on the Examiner to set forth a technical basis for reaching the legal conclusion that the discontinuous film will necessarily be strained and not relaxed. The Examiner has not set forth any facts or rationales at all, though. Accordingly, the Examiner has not established a *prima facie* showing of inherency. Accordingly, we do not sustain the anticipation rejection of claims 3 and 23, or the rejection of claims 4 and 24 which respectively depend therefrom.

Claims 10 and 15

Dependent claims 10 and 15 both recite that the field effect transistor “further [includes] a void within said layer of semiconductor material.” The Examiner finds that Bae evidences that it would have been obvious to modify Krivokapic’s structure so as to include such voids. Appellants respond by arguing *inter alia* a secondary consideration for why the references are not combinable: Bae’s manufacturing technique for forming the voids is utterly inconsistent with Krivokapic’s manufacturing process because Krivokapic’s “isolation structures are required from the earliest stages of fabrication” (App. Br. 17). The Examiner, in turn, has not responded to this argument (*see* Ans. 4-7).

Because the Examiner has not, in any manner, (i) described how Krivokapic’s fabrication process is to be modified so as to additionally provide the voids, or (ii) explained why undertaking this undescribed process modification would be within the skill of an ordinarily skilled artisan, we find that Appellants have adequately rebutted the Examiner’s *prima facie* showing of obviousness. Accordingly, we will not sustain the rejection of dependent claims 10 and 15.

DECISION

We affirm the Examiner’s decision rejecting claims 1, 2, 5, 11, 21, 22, and 25.

We reverse the Examiner’s decision rejecting claims 3, 4, 10, 15, 23, and 24.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED-IN-PART

gvw

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